UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/413,792	10/07/1999	PATRICK ROSS TRISCHITTA	04787.81749	2431

7590 09/08/2004

DANIEL N. DAISAK
TYCOM (US) INC.
250 INDUSTRIAL WAY WEST
ROOM 2B106
EATONTOWN, NJ 07724

EXAMINER	
SINGH, DALZID E	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/413,792	TRISCHITTA, PATRICK ROSS	
	Examiner	Art Unit	
	Dalzid Singh	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 20-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-15 and 20-23* is/are rejected.

7)☒ Claim(s) *7 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5, 6, 9, 10 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Crameri et al (US Patent No. 6,166,836).

Regarding claim 1, Crameri et al disclose power switching of optical fibre cable, shown in Fig. 1, comprising:

first (16) and second cables (18), wherein each of said first and second cables further comprises one or more data signal carrying lines and an electrical power conductor, wherein said first cable carries data signals between communication devices of a first landmass (10) and a second landmass (20), and said second cable carries data signals between communication devices of the first landmass (10) and a third landmass (22) (see col. 1, lines 5-10, Crameri et al disclose that the system is used to carry power and data signal (communication) between different landmass); and

an electrical power connector (within branching unit 10) connecting said electrical power conductors of said first (16) and second cables (18) so that electrical current can flow between said power conductors of said first and second cables without power feed equipment coupled to the first or second cable on the first landmass (as shown in Fig. 1,

it appears that there is no power feed equipment connected to the first landmass (branching unit)).

Regarding claim 5, as shown in Fig. 1, an end of said first cable (16), and an end of said second cable (18), enter onto a first landmass at a common landing point (branching unit).

Regarding claim 6, as shown in Fig. 1, ends of said first and second cables are routed to a cable station (i.e., branching unit), and said electrical power connector is located in said cable station (switching circuit (i.e., power connector) are located within the branching unit).

Regarding claim 9, Crameri et al show that the signal carrying lines of said first cable are communicatively isolated from said signal carrying lines of said second cable (since the cables are connected by electrical switches, therefore the cables can be communicatively isolated when the switch is open).

Regarding claim 10, Crameri et al show that signal carrying lines of said first cable carry different signals from signals carried on said signal carrying lines of said second cable (since the signal carrying lines (16 and 18) carry signals from different locations (20 and 22), therefore the signals carried on the two different cables could be different).

Regarding claims 21, as shown in Fig. 1, Crameri et al shows branching unit or power connector comprises cable segments comprising of one or more lines configured for carrying data lines.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-4, 7, 8, 11-15, 20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crameri et al (US Patent No. 6,166,836) in view of prior art figures (hereinafter "reference 2") submitted by the applicant.

Regarding claim 11, Crameri et al disclose power switching of optical fibre cable, shown in Fig. 1, comprising:

a first cable (16) station located on a first landmass (20);

a second cable (18) station located on a second landmass (22);

a plurality of cable segments, each connecting communication networks of two landmasses, wherein each of said plurality of cable segments includes an electrical power conductor and one or more data signal carrying lines located on at least one additional landmass, and wherein no power feed equipment is coupled to any of said plurality of cable segments on said at least one additional landmass (Fig. 1, shows branching unit, located on additional landmass, which connects plurality of cable segments; it appears that there are no power feed connected to the branching unit).

Crameri et al differ from this claim in that Crameri et al do not specifically disclose having a first and second piece of power feed equipment and wherein said electrical power conductors of said plurality of cable segments are electrically

connected in series between a positive terminal of said first piece of power equipment and a negative terminal of said second piece of power feed equipment. However, in Fig. 4 of reference 2, plurality of power feed equipments are shown, wherein the plurality of cable segments are electrically connected in series between a positive terminal (403) of said first piece of power equipment and a negative terminal (404) of said second piece of power feed equipment. It is well known that data signal degrades after traveling long distances, therefore it would have been obvious to provide a repeater system along the transmission line to regenerate the data signal. In submarine communication system, where the repeater system is submerged under water, it is difficult to provide power to the repeater system since there is no source of power underwater. Therefore it would have been obvious to provide power (i.e., power feed) to the repeater system through the transmission lines. The motivation of providing power through the transmission line is to be able place the repeater system anywhere underwater and still have power to function properly.

Regarding claim 12, as discussed above, reference 2 shows plurality of cable segments includes a device powered by an electrical current carried on said electrical power conductor of said one of said plurality of cable segments (since the cable is connected at the positive and negative terminal, therefore current is able to flow).

Regarding claims 13 and 14, as discussed above, reference 2 further shows said data signal carrying lines within said one of said plurality of cable segments is an optical fiber (see Fig. 2).

Regarding claim 15, Crameri et al disclose that data signal carrying lines of said plurality of cable segments are not connected in series between said first and second cable stations (in Fig. 5, Crameri et al show switching circuits in the branching units, where different cables can be connected (switch closed) in series or disconnected (switch open)).

Regarding claim 2, in Fig. 1, Crameri et al show plurality of switching circuits connecting plurality of cables from different land stations and differ from this claim in that Crameri et al do not specifically disclose a first piece of power feed equipment having positive and negative terminals. However, reference 2, shows power feed equipments (403 and 404) having positive and negative terminals. Since power feed equipments have positive and negative terminals, therefore it would have been obvious to connect the positive from one terminal to the negative of the other terminal in order for the current to flow in a specified direction.

Regarding claim 3, as discussed above, in Fig. 3 reference 2 further shows wherein said negative terminal of said first piece of power feed equipment and said positive terminal of said second piece of power feed equipment are electrically connected to a ground potential.

Regarding claim 4, Crameri et al do not specifically teach repeaters, however, in Fig. 3 of reference 2, there is shown one or more optical repeaters (REP). Since terminals are separated in long distances, therefore it would have been obvious to provide repeater system as taught by reference 2. One of ordinary skill would have been motivated to do such in order to regenerate the signal.

Regarding claim 7, Crameri et al differ from this claim in that Crameri et al do not specifically disclose plurality of data signal carrying lines, communicatively coupled to said one or more data signal carrying lines of said first cable, and further communicatively coupled to a communication device of a first communication network located on the first landmass. However, reference 2 shows cross-section of the transmission lines, which comprises of plurality of data carrying lines (202). Therefore, it would have been obvious to provide plurality of data lines in order to transfer large amount of data signal to various locations. Furthermore, since the cable contains data lines, therefore it would have been obvious that the cable is connected to various communication devices in order to transmit and receive information signal.

Regarding claim 8, the combination of Crameri et al and reference 2 differs from this claim in that the combination does not specifically disclose converter for converting between optical and electrical signals. However, since data signal is carried by optical signal, therefore it would have been obvious to provide a converter that converts the optical signal into electrical signal in order to received and processed the transmitted information signal.

Regarding claims 20 and 22, in Fig. 1, Crameri et al show branching unit or power connector wherein different landmass may be coupled. Crameri et al does not specifically disclose that the power connector is an insulated copper cable. However, it is well known electrical signal produces electromagnetic field. Electromagnetic field interferes operation of electronic devices. Therefore, it would have been obvious to an artisan of ordinary skill to provide protective cover to the switching cable such as

insulation. One of rodinary skill in the art would have been motivated to do this in order to prevent electromagnetic interference between devices. Furthermore, copper cable is a well known conductor and readily available material, therefore it would have been obvious to choose copper as a conductive material in order to reduce cost.

Regarding claims 23, as shown in Fig. 1, Crameri et al shows branching unit or power connector comprises cable segments comprising of one or more lines configured for carrying data lines.

Response to Arguments

5. Applicant's arguments filed 13 June 2004 have been fully considered but they are not persuasive.

Applicant argues that the reference "Crameri et al" does not teach a system including a first cable for carrying data signals between a first landmass and a second landmass, a second cable for carrying data signals between the first landmass and a third landmass, and a connector located at the first landmass for connecting power conductors of the first and second cables wherein no separate current source is coupled to the electrical power connector on the first landmass"

Discussed in the claim rejections above and shown in Fig. 1, Crameri et al shows first (16) and second cable (18) connecting the branching unit (10), located at first location, to a second landmass (20) and third landmass (22). Since the first and second cables are connected to the branching unit therefore the first and second cable carry communication data between the first location, second landmass and third landmass.

Crameri et al does not disclose that the branching unit is located on a landmass. However, placement of the connector unit or the branching unit is a matter of intended use of location and does not differentiate in its switching capability. Therefore, it is inherent that the branching unit of Crameri et al can also be located on a landmass.

Furthermore, applicant argues that the claimed invention requires no separate current source is coupled to the electrical power connector on the first landmass. It is unclear what is meant by "no separate current source" As disclose in the specification as originally filled, on page 9, lines 18-21 and page 10, lines 1-11, different embodiments, as shown in Figs. 5, 5B or 6, disclosed power feed equipment located at a landmass supplying power to the cables so that current can flow from one landmass to the other. This indicates that current source or power feed equipment is coupled to the cable and supplies current to the optical connector. Crameri et al in Fig. 1, shows that power feed equipment located at second landmass (20) supplies power to the branching unit (see col. 3, lines 31-37) and the third landmass (22). Therefore, current is supplied to the branching unit through the cable and the branching unit does not have current supply in its location.

In regard to claims 5, 6, 9 and 10, applicant argues that Crameri et al does not teach that the cables are communicatively isolated and that the cables carry different signals. However, Crameri et al disclose optical communication system (see col. 1, lines 5-12). In optical communication, it is well known that optical signal is transmitted on different cables between one station, for example at second landmass, to the other station located at third landmass. Since information signal varies from one location to

the other, therefore it is inherent that the cables carry different signals. Moreover, it is well known that as optical signal travels on transmission lines or cable, signal quality degrades. In addition, the present of multiple cables carrying information signal will result in electromagnetic interference between the plurality of information carrying cables. Therefore, it is inherent that there exist isolation means between the cables in order to prevent such interference.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is 571-272-3029. The examiner can normally be reached on Mon-Fri 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS
September 2, 2004

M. R. SEDIGHIAN
PRIMARY EXAMINER